



Agronomic Spotlight

Common Rust of Corn

- Common rust is a fungal disease that generally affects corn later in the season after tasseling, although severe levels are usually the result of infection at an earlier growth stage.
- Fields should be scouted for common rust to identify early infection and potentially help manage the disease.
- The best management option is growing corn products with higher levels of resistance to the disease.

Conditions that Favor Common Rust

Common rust is caused by the fungus *Puccinia sorghi* and occurs in temperate to sub-tropical areas. The pathogen overwinters in the southern United States and Mexico. In the summer, storms and winds blow the fungal spores north into the Corn Belt. Young leaves are more susceptible to infection with common rust than older leaves. Once spores land on leaf tissue, 3 to 6 hours of moisture are required for spores to germinate and infect. Infection usually occurs in the leaf whorl where adequate moisture is common. Disease development is favored by moist conditions caused by rainfall, dew, or high relative humidity (95% or greater), and moderate temperatures between 60 and 77 °F.

Common Rust Symptoms

Infections begin as light green to yellow spots on leaves, which then develop into small (< 1/4-inch long), reddish brown, raised pustules. Pustules rupture the leaf epidermis and contain small, cinnamon-brown, powdery spores (Figure 1). The pustules become darker brown to black later in the season. Pustules are often found in bands or patches indicating that infection occurred while the leaf was in the whorl. Because pustules rupture on the leaf surface, water balance within the plant may be affected. Severely infected plants may show symptoms of moisture stress during hot, dry weather, even when soil moisture is adequate.

- Pustules of common rust are circular to elongated, cinnamon-brown in color, and found on both upper and lower leaf surfaces. Pustules rupture on the surface and “powdery” rust spores can be rubbed off.
- Pustules of southern rust are circular, orange in color, and mostly found on the upper leaf surface. Fewer pustules rupture than with common rust.

Potential for Yield Loss

Common rust usually appears to some degree in the southern United States and the Corn Belt every year. If infection occurs late in the season, the potential for economic yield loss is fairly low. However, if infection occurs at early vegetative growth stages and conditions are favorable for disease development, the potential for economic yield loss increases.

Because corn products differ in their level of resistance to common rust, the rate of disease development may be different for each product that is grown. Late-planted corn is more likely to have higher levels of infection since it will likely have young, more susceptible leaves during the time when spores first arrive from overwintering locations.



Figure 1. Common rust on a corn leaf.

Management Options

The best management option is growing corn products with higher levels of resistance to common rust. General plant resistance imparts a reduced number and size of pustules and the overall severity of infection.

Fungicides can effectively control common rust if initial applications are made while there are only a few pustules present per leaf. Use of fungicides is fairly common in sweet corn and seed corn production, but is rarely warranted in field corn because common rust rarely causes economically damaging yield loss in field corn. Scouting each corn field on a regular schedule will help determine if fungicide applications should be considered. If significant levels of common rust are present on the lower leaves prior to silking and the forecast is for cool, humid or wet conditions, a fungicide application may be beneficial.

Sources

¹ Sweets, L.E. and Wrather, S. 2008. Corn diseases. University of Missouri Extension. IPM1001. ² Shaner, G. 2000. Corn Rust - An epidemic? Purdue University. www.agry.purdue.edu. ³ Pataky, S. Differentiating common rust and southern rust. Plant Management Network. University of Illinois. Web sources verified 6/02/14. 140602060422

For additional agronomic information, please contact your local seed representative. Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.

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